

World Meteorological Organization

REPORT ON THE SECOND WMO CONFERENCE ON WOMEN IN METEOROLOGY AND HYDROLOGY

Geneva, Switzerland, 24-27 March 2003



EXECUTIVE SUMMARY

The Second WMO Conference on Women in Meteorology and Hydrology was held at the Headquarters of the WMO Secretariat in Geneva from 24 to 27 March 2003. The main objectives of the Conference were: to review the current situation as regards the participation of women in meteorology and hydrology; to review progress since the WMO Bangkok Meeting on the Participation of Women in Meteorology and Hydrology in 1997; to develop benchmarks to measure future progress; and to develop strategies to increase the participation of women in the activities of WMO and in the work of National Meteorological and Hydrological Services (NMHSs). The Conference also considered the gender sensitive aspects of the activities of NMHSs such as the application of climate information by rural women and the special roles women play in water management and disaster response.

The Conference reviewed and reaffirmed the recommendations of the 1997 Bangkok meeting and stressed the need for their implementation and for accountability. To advance that objective, and to further promote the participation of women in meteorology and hydrology and in WMO activities, the Conference agreed that the following actions should be taken by women professionals, and in particular, participants to the Conference:

- Women professionals to promote and participate in the process of career development through formal and informal mentoring, guiding and counselling activities.
- Participants to brief the Permanent Representatives of their countries prior to Congress on the recommendations and outcomes of the conference.
- Participants to work continuously to promote awareness of results of the conference within their own institutions/organizations/countries.
- Participants to form regional/sub-regional networks to exchange ideas, experiences and policies. These networks could also be used to allow participants to share information with other countries within their region not present at the conference.
- NMHSs to consider establishing national associations of women in meteorology and hydrology with a view towards the eventual formation of an International Association of Women in Meteorology and Hydrology.

The Conference urged NMHSs, Technical Commission and Regional Associations and the Permanent Representatives to take the following actions:

- NMHSs to establish and support gender focal points on meteorology and hydrology in each country.
- Regional Associations and Technical Commissions to appoint and support gender focal points from among women with appropriate expertise.
- Regional Associations and Technical Commissions to report regularly on progress on gender issues to Congress/EC.
- Permanent Representatives to make regular reports on gender issues at Regional Association meetings.
- Permanent Representatives to ensure that information related to career opportunities and development is made available in particular to their female staff.
- NMHSs to take special actions to retain young female professionals, for example, by offering exchanges, secondments, and special assignments.

The Conference recommended that the WMO Secretariat take the lead on the following actions:

- Establish a WMO gender expert position to monitor progress, analyze gender issues within WMO and assist in the implementation of actions recommended by this conference. The gender expert should be charged, among other things, with developing gender sensitivity training modules for use at the WMO Secretariat and in NMHSs.
- Establish an advisory panel to the Executive Council on gender issues, which should be composed of the WMO gender expert and gender focal points from Regional Associations and Technical Commissions. The panel would be tasked amongst other things, to consider what mechanisms might be needed in the future to advance gender equality.
- Include gender issues as an item in the agenda of Congress.
- Collect gender-disaggregated statistics on a regular basis from its members and compile reports on what Members have done to advance the recommendations of this conference and to identify any barriers to progress.
- Develop terms of reference of national gender focal points.
- Encourage Permanent Representatives to include women as members of delegations to WMO meetings, conferences, training programs, etc., by adding explicit language to that effect on nomination forms.
- Continue to promote, develop, and make available distance learning (awareness and training) modules, including those leading to degree programmes offered through accredited universities.
- Make the material from the Geneva Conference available on the WMO website on women in meteorology and hydrology.
- Make available funds to enable the actions recommended by this Conference to be implemented.

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INTRODUCTION

1. The Second WMO Conference on Women in Meteorology and Hydrology was held at the Headquarters of WMO Secretariat in Geneva from 24 to 27 March 2003. The main objectives of the Conference were: to review the current situation as regards the participation of women in meteorology and hydrology, since the WMO Bangkok Meeting on the Participation of Women in Meteorology and Hydrology in 1997; to develop benchmarks to measure future progress; and to develop strategies to increase the participation of women in the activities of WMO and in the work of National Meteorological and Hydrological Services (NMHSs). The Conference also considered the gender sensitive aspects of the activities of NMHSs such as the application of climate information by rural women and the special roles women play in water management and disaster reduction. There were 134 participants from 101 Members of WMO and 4 representatives from International Organizations. The list of participants is shown as *Appendix I*.

2. The Conference was opened by **Prof. G.O.P.Obasi, the Secretary-General of WMO**

ADDRESS BY PROFESSOR G.O.P. OBASI

3. In his address, the Secretary-General recalled the conference organized by WMO for women in meteorology and hydrology in Bangkok in 1997. He emphasized that the present conference was not only to review the progress made since the Bangkok meeting but that its major undertaking was to explore various avenues and opportunities provided by advances in technology as well as the use of networking and mentoring in meeting the challenges facing women in advancing their careers in meteorology and hydrology.

4. The Secretary-General outlined some of the difficulties arising mostly due to cultural and social norms requiring women to combine family and professional responsibilities. These proved especially important in cases of operational services requiring shift work.

5. Prof. Obasi referred to the global survey conducted in 2001 on the participation of women and men in the work of WMO. He noted that the key conclusion of the survey indicated some small incremental increases in the percentages of the participation of women in WMO activities compared to the results of the first similar survey conducted in 1997.

6. The Secretary-General stressed that in the WMO Secretariat, the policy of equal opportunity in obtaining positions and promotion was strictly adhered to. He pointed out that the percentage of women in professional categories had increased in recent years and that currently women occupied several posts of directors of departments and chiefs of divisions in the Secretariat.

7. In concluding his address, Prof. Obasi urged Governments and Directors of NMHSs to take action in order to promote the participation of women in meteorology and hydrology. He pledged his own support in ensuring that women continued to be increasingly involved in the activities and work of WMO.

ADDRESS BY Ms JOKE WALLER-HUNTER

8. Ms Joke Waller-Hunter, stated that as the Executive Secretary of the UNFCC, she was interested not only in aspects of the lives of participants at the Conference, but also in efforts aimed at ensuring greater involvement of women in meteorology and hydrology. She noted that women have fought hard battles over many years to be accepted, appreciated and accredited as full-fledged scientists and to be elevated onto the same level as their male counterparts. She proposed that women have been active scientists for as long as human beings have lived on this planet, and gave the example of En Hedu'Anna, Chief Priestess of the moon-god in Sumeria, whose astronomical and mathematical endeavours over 4000 years ago were gleaned from writing on stone tablets. She made the point that societies "re-realised" that scientific progress and advancement are not determined by, or linked to gender.

9. Ms Joke Waller-Hunter made reference to the current discussion on climate change and UNFCC objectives to stabilize greenhouse gas concentrations and allow ecosystems to adapt naturally to climate change, thereby ensuring food production and sustainable economic development. As climate change impacts on development and as solutions must be consistent with development objectives, it becomes imperative to link the physical sciences such as meteorology and hydrology with the social sciences. The research needed to guide and inform policy options requires an unprecedented effort of individual collaboration, well beyond the scope of individual groups, countries or regions. Ms Waller-Hunter noted proudly that women have been actively involved in the work of the IPCC that informs the negotiations of the UNFCC. She named a few of these outstanding women and noted with pleasure the election of the first woman to the chair of an IPCC subsidiary body, Daniela Stoycheva (Bulgaria).

10. Noting that the definition and purpose of science includes no separation in terms of gender, Ms Waller-Hunter identified the major concern of the Conference as "the nexus between the substance of our respective scientific fields and the methodology of getting more women involved in our fields". She concluded that dedication, persistence and passion are the trademarks of women in science and policy that will pave the way to the future.

KEYNOTE SPEECHES

11. **Dr Kema Chikwe**, Minister of Aviation of Nigeria, indicated that the Conference presented an excellent opportunity for delegates from the developing countries, especially Africa, to prepare strategies on the achievement of gender equality in the fields of Meteorology and Hydrology in the NMHSs of their respective countries and in WMO. She said that this was absolutely necessary in this first decade of the 21st century because in most cultures in Africa, it is wrongly perceived that the role of women is in the home only. She noted that the level of encouragement and empowerment received by women under the present Nigerian Government led by President Obasanjo is unprecedented in the history of the country. The government has put in place a National Policy on Women and reserves 30% of all political appointments for women.

12. This progressive trend has also been reflected in the Nigerian Meteorological Service which employed its first female meteorologist in 1975 and now has 40 trained female meteorologists and hydrologists. Up to 2000 there were no women at the directorate level but in 2003 there are 4 women in the 12-person management team in the Nigerian Meteorological Agency. Dr Chikwe stated that on a continental level, career prospects of women in the field of meteorology and hydrology have improved, noting that before the Bangkok Conference there was only one female Permanent Representative (PR) to WMO from Africa but in 2003 there were 4 female PRs. She called for professional women in

positions of authority in meteorology and hydrology to be role models to younger women and girls, to inspire and motivate them.

13. In wishing the Conference success, Dr Chikwe concluded her talk with a touching poem that she had written entitled, "Meteorology and Hydrology: Cry of the African Woman", in which she appealed for relief for the over-burdened African woman from the life of labour and drudgery, and deprivation of food and water. However, the well-received poem ends with hope, "I am the new direction, the challenge, the wife, the mother".

14. **Prof. Lydia Makhubu**, President of the Third World Organization of Women in Science, (TWOWS) noted that while scientific development of the Third World depends crucially on the full utilization of the intellectual capacity of both men and women, the number of women in science and technology, as students and staff in institutions and in scientific leadership, is very small compared to that of men. She mentioned that women have a unique approach to the application of science and technology to the development process. As a result, her organisation's fundamental objectives are to try to apply the unique skills and talents of women scientists to the solution of urgent problems in the Third World, and in so doing position its membership alongside other scientists in the global scientific community. TWOWS's activities include the provision of research and travel grants to members and the publication of a newsletter. Also, it operates a scholarship programme to provide post-graduate fellowships to women to pursue studies to the PhD level; TWOWS has already awarded 155 fellowships.

15. Professor Makhubu enumerated the historical and traditional prejudices against women entering scientific fields and deemed them unfortunate, since science and technology have been termed engines for social and economic change and it is essential that women be well grounded in these areas as mothers, social educators and transmitters of ideas from generation to generation. Women can be wives, mothers and scientists at the same time, making the transition from traditional leadership to leadership in science, and transforming the natural inclination for life sciences into a strength to enable them to contribute to the use of science for the benefit of the Third World.

16. Professor Makhubu called for a shift in the paradigm governing the practice of science in order to promote greater involvement of women in science and technology, with men and women working together as advocates for women's development. Other proposals include tackling gender stereotyping in education as a means of changing negative attitudes towards education of girls in the sciences, building confidence in young girls to pursue scientific careers, promoting post-graduate training for women, strengthening women's capacity for research and promoting public understanding of science.

ORGANIZATIONAL ARRANGEMENTS

17. The Conference agreed to its working hours (0900-1200 and 1400-1700) and the arrangements for the conduct of the discussion groups. The Conference unanimously elected Mary Glackin (USA), Nancy Cutler (Canada), Magali Stoll (France), Shyamala Balasubramanian (India) and Marina Petrova (Russian Federation) as Session Chairs, and adopted the agenda as shown in *Appendix II*. The Session Chairs unanimously elected Ms Nancy Cutler as the Conference Chair.

EXPERIENCE IN OTHER INTERNATIONAL ORGANIZATIONS

18. Within the private sector and government, people have come to the realization that taking gender into account makes good business sense. Companies realize that to better serve their clients and to make best use of their employees, they must take into account the differences in what men and women want what they can bring to their organizations.

19. At an international level, activities over the last two decades have led to a clear recognition that progress on the environment, human rights, population, social and economic development all depend on the advancement of women. The UN Conference on Environment and Development held in Rio de Janeiro in 1992 affirmed women's vital role in achieving sustainable development and environmental protection. The increased recognition of the importance of the role of women led to the landmark Fourth World Conference on Women held in Beijing in 1995. From this Conference arose a Platform of Action which, amongst many other recommendations to governments around the world, admonished UN agencies to develop gender-sensitive policies and programmes. As a result, the concept of gender mainstreaming (see paragraph 23 below) was introduced into the planning process and programme implementation of many UN agencies.

20. **Ms Patricia Faccin**, Secretary of the Working Group on Gender Issues (GGI), at the International telecommunication Union (ITU) made a presentation on the experience of ITU from a gender perspective and shared some statistics on the percentages of women in the professional and support categories among the ITU staff. In 2002 these percentages stood at 71.5% professional males and 28.5% females compared to 27.7% males and 72.3% females in the general service category. There are 2 groups at ITU whose objectives are primarily to promote and ensure gender equality, the Internal Group on Gender Issues (GGI) and the Development Sector Working Group on Gender Issues (WGGI).

21. The GGI focuses on gender-awareness training workshops, participation in UN Agency activities, International Women's Day activities and harassment policy, among other things, and it has adopted gender mainstreaming as its primary goal in order to attain and maintain gender equality at ITU. The WGGI aims to increase awareness of developmental impact of telecommunication on women and promote mainstreaming of gender issues in telecommunication policy and programmes. Also, it wants to ensure that the benefits of telecommunication are equally available to women and men. It has pursued its goal with WGGI publications and promotional materials, a gender questionnaire survey, a gender website, expert presentations and workshops. The March 2002 World Telecommunication Development Conference at Istanbul reinforced gender mainstreaming at ITU and gender perspective is now integrated into all action, strategic, operational and budgetary plans of ITU.

22. **Mr Patrice Robineau** from the UN Economic Commission for Europe (ECE) made a presentation on the experience at the UNECE and on gender mainstreaming. He noted that women are under-represented at the decision-making level especially in technical organizations, and proposed that cultural and social barriers are slowing the process of inclusion of women in all spheres of political and economic life. Inequalities exist in employment and recruitment opportunities, in training, and in representation in the upper hierarchy of organizations. He indicated that gender mainstreaming is a required tool to promote gender equality since it operates to ensure justice, equity and the empowerment of women. In order to achieve a balanced society, Mr Robineau said there had to be changes in behaviours at social and political levels, and a step-by-step introduction of gender perspectives in all aspects of all operation and planning activity in organizations.

GENDER MAINSTREAMING

23. Gender mainstreaming is defined by the United Nations as "the process of assessing the implications for women and men of any planned action, including legislation, policies and programmes, in any area and all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension in the design, implementation, monitoring and evaluation of policies and programmes, in all political, economic and societal spheres so that women and men benefit equally, and inequality is not perpetuated. The ultimate goal is

to achieve gender equality" (ref: Economic and Social Council, substantive session of July 1997).

24. A first step in mainstreaming gender is to do a gender analysis. Although WMO has not yet undertaken any formal gender analysis, some members of our community have recognized the gender dimensions of their activities. For instance, the Drought Monitoring Centre in Nairobi is working with a team of experts to investigate the role of women in the application of climate information in the Greater Horn of Africa region (see further discussions below by M. Onyango). The case is made that timely access and application of weather and climate information by rural women is crucial to poverty reduction, environmental management, disaster management and sustainable development. Members of the hydrological community report on the progress being made through the application of a gender mainstreaming in the water sector (see paragraph 28 below). In all cases equitable gender application throughout a project cycle is essential to its success.

25. **Ms Betty Soto Terrazas**, a public health specialist from Bolivia made a presentation entitled "Safe Water and Sanitation at the Local Level in Bolivia." She talked about the hard life of rural women who are loaded with responsibilities from an early age. Illiteracy is high among them and sanitation is poor, and the situation becomes tremendously worse during, and in the aftermath of natural disasters such as droughts and floods, when needed Government support is unavailable. Women are excluded from high level decision-making and only slow progress is being made with the introduction of a gender and culture perspective at that level.

26. She urged the Government of Bolivia to take appropriate measures to alleviate the situation of women by including them in all aspects of decision-making at the local level so that they can be aware and trained to handle themselves and take action to secure the safety and well-being of their families, as well as communities, when disasters strike. An effective way to achieve this goal to increase the involvement of women is to focus on the politics and institutions at the local level.

27. **Dr Maria Onyango** from the Maseno University in Kenya spoke on the role of women in the application of Climate Information in the Greater Horn of Africa. She showed that extreme climate events impacted more on African women who make up the bulk of the rural population but are unskilled to handle floods and droughts that are responsible for 70% of the regions natural disasters. Women lack technology and know-how to conserve water and they tend to degrade the forests when they forage for food and wood-fuel. Therefore, even though women are key actors in environment management activities they are inadvertently contributing to climate change.

28. Dr Onyango proposed that increasing the education and awareness of women in the region would empower them to be more proactive and responsible in handling climate impacts. In addition to community mobilisation, research on how to handle challenges in the context of specific traditional and cultural groups will be required to alleviate the plight of the African rural woman. Among actions she recommended to achieve solutions were appropriate pilot projects, training workshops scaled down to country level and gender mainstreaming for conservation of water and forest management strategies.

29. **Dr Emma Archer** from the University of Cape Town in South Africa stated that in spite of the fact that climate forecasting is becoming more accurate it has been found that, with respect to the agricultural sector, the Climate Information from the South African Weather Service can be limited in its reach. Information primarily needs to benefit the end-users. Studies show that subgroups such as women, lower-caste families, herders living on the outskirts and the elderly may be excluded from the benefits of climate information. Women's role in rural food security in South Africa is critical yet they can be effectively

excluded from climate information benefits. A study found that gender is a highly significant factor in the application and utility of climate information. The time of onset of a climate event was the most frequently requested forecast type and most forecasts were required for the period August to October. As head of households, men preferred the radio as their information source but women would prefer the information from extension officers.

30. Dr Archer noted that since women comprise a key climate information user-group but can be excluded from the climate information system, methods have to be found to spread the benefit to them. She proposed that the way forward is to focus on who needs the climate information, what specific information is required and how to communicate this information effectively to all users. Among factors to consider are the environment of the user, the local institutional capacity and who are the key intermediaries in the information dissemination.

BREAKING THROUGH THE GLASS CEILING

31. **Ms Linda Wirth**, of the Bureau for Gender Equality of International Labour Organization (ILO) delivered a presentation on Breaking through the Glass Ceiling. She defined the glass ceiling as the invisible, artificial barriers that block women from senior executive jobs, keeping them at the bottom of the economic pyramid. The ceiling exists in the way work is organised, in job segregation, gender pay gap, gender division of time spent at work and family and women's lack of management experience, among other things. She used December 2000 statistics to show the existence of the glass ceiling among women professionals in the UN system: women comprised half of all professionals at the United Nations Population Fund (UNFPA), but only 33.3% at ILO, 21.7% at WMO and 17.3% at the International Atomic Energy Agency (IAEA).

32. Ms Wirth stated that the glass ceiling must be dismantled because women's qualifications and skills are improving, more women are starting businesses, they are a key resource in new-product creation, and "it's good for business". There are several ways to dismantle the glass ceiling including diversification of occupations for men and women, sharing family responsibilities, elimination of gender biases in recruitment, promotion, training and increased gender sensitivities in human resource policies. At ILO, a set of gender audit recommendations have been made and include: clear targets to improve staff balance at all levels, promotion of female leadership in the office with active targeting of women for senior levels, creation of a working environment for a more balanced private and professional life and non-tolerance of sexual and other forms of harassment and all forms of sexist behaviour.

TAKING STOCK: SURVEY RESULTS AND WMO EXPERIENCE

33. **Ms Haleh Kootval**, Chief of the Public Weather Services Division at the WMO Secretariat and one of the focal points on women's issues in WMO, gave an overview of the results of a global survey carried out in 2001 to gather statistics on the level and nature of the participation of women and men in the activities of the WMO compared to the base line survey conducted in 1997. The key conclusion of the survey was that, although there had been some small, incremental increases in the percentage of women participating in some of WMO activities since 1997, there had been little significant change in the overall participation. Women remained drastically under-represented in WMO activities. Participation in technical commissions, regional associations and the Executive Council as well as employment in NMHSs and the WMO Secretariat alike continued to be mainly male-dominated.

34. Some specific survey results are shown below:

- Women comprise 6.4% of principal delegates to Congress, compared to 3.1% in the 1997 survey;
- Men are about 8 times more likely than women to serve as members of delegations to Congress, compared to 10 times in the 1997 survey;
- Men are 5 times more likely than women to serve as delegates to WMO Executive Council meetings, compared to nearly 7 times in the 1997 survey;
- Women comprise 11% of the membership of WMO technical commissions, the same as in the 1997 survey;
- Whereas data from a few large countries in RA II and RA VI show high rates of NMHS employment of women, globally over 90% of Members have low rates of employment of women in the workforce; and
- Even though women may comprise a reasonable fraction of the overall NMHS workforce, they constitute only around 10-15% of the participants in most WMO activities.

35. With respect to the numbers of employees in the WMO Secretariat, although the actual number of women staff suggests gender equity, in 1999 women comprised 18.9% of the professional staff and 78.6 % of the general services staff. However by end of 2002 there had been a small but significant increase in the percentage of professional women to 23.7%. In 2003, women fill in the positions of directors of three departments and chiefs of a number of divisions within the Secretariat.

TAKING STOCK: NMHSs EXPERIENCES

36. The Conference continued its work on this item in eleven discussion groups. The groups discussed items such as national policies that had impacts on gender issues as well as obstacles and challenges encountered when trying to respond to opportunities in developing a career in meteorology and hydrology. The participants also exchanged their personal experiences regarding their work place and identified common issues and problems confronted by most women working in NMHSs, most of which had already been discussed and addressed during the Bangkok Conference (1997). The results of the discussions were summarized and presented by the Chair of the session to the plenary. In theory and practice, social and institutional barriers to female participation still exist in many countries and pose constraints to improvements in women's work status. It is a challenge to get young girls to take up science subjects and to create empowering work environments for women in all aspects of meteorology and hydrology. This could be achieved through changing attitudes in the workplace, at home, and in national policies. (See Annex).

REVIEWING AND BUILDING ON BANGKOK RECOMMENDATIONS

37. **Ms Nancy Cutler** (Canada) made a presentation on the recommendations of the Bangkok meeting. The Conference reviewed those recommendations. It recalled that this meeting had adopted a set of recommendations to women professionals, NMHSs and the WMO Secretariat in five broad areas as follows:

- a) Education and training;
- b) Career and promotion opportunities;
- c) Work environment policies and practices;
- d) Participation in the work of WMO;
- e) Representation of women in the WMO Secretariat.

38. Ms Cutler noted that since that time some recommendations had been approved by the WMO Congress in 1999 and that resolutions had been adopted on the involvement of women at Technical Commission and Regional Association meetings. She informed the participants that the WMO website on women's issues had been established and that quite a few articles featuring women had been published in the WMO Bulletin. The upcoming edition of the Bulletin would feature women's roles in meteorology and hydrology. She further noted that most of the recommendations put forward by the Bangkok meeting were still viable and suggested that this conference discuss the programme of action or strategies for their early implementation which would ensure the improvement of women's participation in meteorology and hydrology. She further suggested that vital networking efforts be actively pursued by the participants at the Conference. The Conference took this advice into consideration when formulating new recommendations (see paragraphs 50-54 below).

MEETING CHALLENGES

39. **Mr Kaliba Konare**, Director of Education and Training Department at the WMO Secretariat gave an overview of training through WMO programmes. He emphasized that the education and training programme was one of the eight WMO major programmes and that the WMO Convention mentioned that one of the purposes of the WMO was to encourage training in meteorology. Mr Konare introduced the new WMO classification of personnel in meteorology and hydrology and stressed the importance of continuing training and further education for meteorologists/hydrologists and meteorological/hydrological technicians.

40. Mr Konare presented results of the 2002 WMO survey on Members' training requirements from an international perspective, and the establishment of world-wide priorities. He noted that the ratios of women to men in most Members' Services, except those in transition, were still quite low. With regard to WMO fellowships, he noted that the number of WMO female fellows had increased from 37 to 99 during the 1998 - 2002 period. He stressed that the award of WMO fellowships was based on the requirements and nominations from governments and that it was important to encourage governments and NMHSs to nominate and support qualified female staff.

41. **Ms Marina Petrova** (Specialized Centre for Meteorological Statistics, Russian Federation) outlined her own career to demonstrate that women could achieve successful careers, and gave participants advice based on her personal experiences. She pointed out that women must formulate personal goals, be self-confident, understand themselves and be prepared to make sacrifices. She mentioned a wide range of activities taking place at the Centre, which she heads. Looking back at her own experience, she stressed that she had been ambitious in her youth and was always trying to move ahead. She acknowledged the contribution of her colleagues and family in her success.

42. **Ms Dong Chaohua** (National Meteorological Satellite Centre, NMSC, China) made a presentation on women's contribution in developing Chinese satellite meteorological services. She presented a number of statistics on female staff members. She noted that a number of female staff members published papers, books and attended conferences/seminars and received awards. She showed a number of important technical products relevant to meteorological satellites which were made by women.

43. Ms Dong concluded that working in a meteorological service, especially in a satellite meteorological service, was an ideal profession for women, noting that opportunities and challenges co-existed. Responding to a question, she mentioned that the Director of the Board of the NMSC, under the China Meteorological Administration, had developed special progressive policies, including that of equal opportunities for men and women.

44. **Ms Vickie Nadolski** (NOAA/NWS, USA) made a presentation on increasing participants' understanding of the importance of mentoring. She explained that mentoring was linking an experienced person with a less experienced person to help the latter's personal and professional growth. She pointed out the importance of mentoring in recruitment and employee/leadership development and outlined essential characteristics of a mentoring relationship such as trust, confidentiality and partnership-building. She also enumerated the many benefits to "mentorees" as well as mentors themselves.

45. Ms Nadolski also introduced the concept of networking which is the exchange of information or services among individuals, groups, or institutions and provided many tips for efficient networking. She pointed out that networking was important for both men and women.

46. **Ms Maria Pirone** (AER, USA) introduced the use of new technologies which could allow for improved and more efficient working conditions. She noted that one of the numerous difficulties women encountered in their work included excessive travel which adversely impacted family life. She pointed out that strategies and methods could be devised in organizations to diminish such difficulties. She stressed that the evolution of telecommuting or teleworking technology allowed more work flexibility and held great promise for the future.

THE WAY FORWARD

47. Following all presentations and discussions under the previous agenda items, the Conference spent considerable time on deliberating future means to increase the participation of women in WMO and NMHSs' activities. The session was conducted in discussion groups which were charged to review the Bangkok recommendations, to compile lessons learned since the Bangkok meeting and to identify actions to be taken as outcomes of this Conference.

48. Ms Nancy Cutler reviewed the reports from the discussion groups and presented a summary to plenary. The Conference agreed that although bold steps were necessary to accomplish its goals, any action plan must take into consideration budgetary and programmatic constraints. This point was taken into account in particular during discussions of establishing a possible WMO Commission on Gender or Diversity. The latter was deemed by some participants to be a legitimate or even essential objective, but that the time was not right to make such a recommendation. Hence, the Conference suggested the establishment of other mechanisms such as an EC Advisory Group on Gender and felt that the establishment of a new WMO commission might be considered at a later stage.

49. The Conference agreed that the essence of the Bangkok recommendations were still valid. It noted that there had been some improvement in women's participation in meteorology and hydrology. For example women had greater access to fellowships and had reached some higher decision-making levels in NMHSs and WMO Secretariat. However, in general, progress had been slower than desired. The Conference therefore took time to analyze why there was this lack of progress and made note of the following lessons learned since the Bangkok meeting in formulating its recommendations. While it was clear from the discussion groups that experiences varied greatly from region to region and even within regions, the following points were deemed generally applicable:

- Follow-up in terms of monitoring, reporting, and dissemination of information had been insufficient.
- In general, there was no accountability for implementing recommendations.

- Many countries had not identified focal points and for those that had, their roles were minimal or undefined.
- Clear terms of reference for the focal points were needed.
- A resource book of meteorological, hydrological, and other related specialists with gender identification and subject-matter expertise would be useful.
- There should be more continuity from one conference on women in meteorology/hydrology to the next.
- Participants did not generally publicize the outcome of the conference in their home institutions.

50. Based on these lessons and noting the overall direction of UN agencies to improve gender balance, the Conference agreed to a set of action items. The Conference recognised that the actions should be addressed to women professionals, NMHSs, and the WMO Secretariat.

51. The Conference agreed that the following actions should be taken by women professionals, and in particular, participants to the Conference:

- Women professionals to promote and participate in the process of career development through formal and informal mentoring, guiding and counselling activities (also WMO Secretariat and NMHSs).
- Participants to brief the Permanent Representatives of their countries prior to Congress on outcomes of conference.
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52. The Conference urged NMHSs, Technical Commission and Regional Associations and the Permanent Representatives to take the following actions:

- NMHSs to appoint and support gender focal points in each country (hydrology and meteorology).
- Regional Associations and Technical Commissions to appoint and support gender focal points from among women with appropriate expertise.
- Regional Associations and Technical Commissions to report regularly on progress on gender issues to Congress/EC as appropriate.
- Permanent Representatives to make regular reports on gender issues at Regional Association meetings.
- Permanent Representatives to ensure that information related to career opportunities and development is made available to all staff members, in particular to women.

- NMHSs should take special actions to retain young female professionals, for example, by offering exchanges, secondment, and special assignments.

53. To facilitate and initiate the actions necessary, the Conference recommends that the WMO secretariat take the lead on the following actions:

- Establish a WMO gender expert position to monitor progress, analyze gender issues within WMO and assist in the implementation of actions recommended by this conference. The gender expert should be charged, among other things, with developing gender sensitivity training modules for use at the WMO Secretariat and in NMHSs.
- Establish an advisory panel to the Executive Council on gender issues, which should be composed of the WMO gender expert and gender focal points from Regional Associations and Technical Commissions. The panel would, in addition, consider what mechanisms might be needed in the future to advance gender equality.
- Include gender issues as an item to the agenda of Congress.
- Collect gender-disaggregated statistics on a regular basis from its members and compile reports on what Members have done to advance the recommendations of this conference and to identify any barriers to progress and report as appropriate.
- Develop terms of reference of national gender focal points.
- Encourage PRs to include women as members of delegations to WMO meetings, conferences, training programs, etc., by adding explicit language to that effect on nomination forms.
- Continue to promote, develop, and make available distance learning (awareness and training) modules, including those leading to degree programmes offered through accredited universities.
- Make the material from the Geneva Conference available on the WMO website on women in meteorology and hydrology.
- Make funds available to enable the actions recommended by this Conference to be implemented.

54. The Conference strongly recommended that another conference be organized in the future to follow-up the outcomes of the Geneva Conference. Scheduling should be such that there was sufficient time to prepare recommendations for the session of Congress following that conference.

55. The Conference was reminded that the detailed budget plan for the next financial period had already been submitted for the consideration of Congress. In the face of the budgetary constraints, it was stressed that the participants had an important role in conveying the above recommendations to their respective permanent representatives and in convincing them to lend their support for their acceptance by Congress.

NEXT STEPS

56. A panel comprising representatives from Australia, Barbados, France, India, Nigeria and the United States of America shared their own experiences of how progress was occurring in their services, but also how they had each worked hard to overcome obstacles in their careers. They all shared the view that the Conference had been a great success and

that much energy and determination had been generated. The challenge now was to keep the momentum going. Successful implementation of the recommendations would depend on how the participants, as ambassadors, publicised and promoted the work of the Conference. The Chair of the session, Ms Marina Petrova (Russian Federation), closed the panel discussion with an emotional appeal to the participants. She likened the outcomes to the birth of a child which must be nurtured to enable it to grow to desired expectations and urged that all the participants work hard to ensure that the expectations of the Conference would be met.

57. The Conference adopted its report and agreed that the report including the recommendations and action plan should be presented to Congress-XIV.

CLOSURE

58. Prior to the closure of the Conference, the participants expressed their appreciation to the Secretary-General of WMO for hosting the event, and to the chairs, the organizing committee, and staff of the Secretariat who had through their hard work ensured the success of the Conference. Mary Glackin (USA), chair of the session, asked each participant to commit to work with the youth to encourage them to choose careers in meteorology and hydrology and to encourage them to be gender sensitive. She asked that each person in the audience also commit to mentor and provide opportunities for their female colleagues, to work with management to remove barriers and to work with governments to develop national policies which would help us reach our goal of gender equality. The Deputy Secretary General, Mr M. Jarraud, thanked all the participants for their attendance, their Permanent Representatives for nominating them, and the many sponsors of the Conference for their generous support. The Conference closed at 1700 on Thursday, 27 March 2003.

COMMON ISSUES AND PROBLEMS IDENTIFIED

The eleven discussion groups identified the following common issues:

BARRIERS:

Social and institutional barriers to female participation still exist in many countries and pose constraints to improvements in women's work status. These include:

- Some women are largely excluded from the paid labour force.
- Social structure, socio-economic conditions, cultural and religious traditions in some countries encourage investment in male over female children, and few females are educated and acquire skills for work.
- There can be occupational gender segregation between women and men due to differences in educational attainment.
- There can be gender differences in work experience.
- There is sometimes a cultural discrimination against women.
- Because of child-bearing, child-rearing and housekeeping responsibilities, women sometimes deliberately choose to work in jobs that are not too demanding of their time.
- Attitude and mindset of women themselves sometimes is a barrier.
- Women can be less geographically mobile than men and therefore are less able to accept promotional transfers.
- Lack of awareness about the fields of meteorology and hydrology results in fewer girls being attracted to the profession.
- Information about WMO activities and training opportunities often does not reach women in NMHSs or if it does, not in a timely manner.
- Interruptions in career progress associated with raising families may delay the age at which women might be interested in training opportunities, and in some cases, they face age discrimination.
- Administrative and managerial positions are mostly held by men who are not always receptive to recruiting and promoting women.
- It is recognized that there is a "Glass Ceiling" – Invisible artificial barriers that block women from senior executive jobs.

EXPERIENCES:

Conference participants reported the following experiences:

- In some countries, the male and other family members need to have a better understanding, that for most women the opportunity to earn income provides financial independence, self confidence and some control over their lives and that her earnings can make a significant contribution to the improvement of their families welfare.
- In some countries such as those of the former USSR, female participation has increased dramatically largely due to the increased participation of married women and improvements in female participation in higher education.

- Although some countries have developed a national policy for the education of girls, a large proportion of young girls still prefer not to study mathematics and science subjects.
- Women in some countries were able to participate better if their family and household responsibilities are reduced through smaller families and sharing of parental responsibilities by both parents and the availability of private and public child care.
- Differences in hours worked and work experience may be important factors in explaining gender differences in earnings.
- Women are often constrained to work in low-paying levels within the NMHSs.
- Gender differentials in earnings sometimes exists. For example, women are constrained to earn less, even with equivalent qualifications or at every level of educational attainment.
- Some countries do have national economic policies to create more employment opportunities for women in the NMHSs and to improve the status and welfare of women.
- Socio-economic development has played a critical role in increasing women's opportunities in the NMHSs in many countries.
- While opportunities for female participation may increase as expected with the level of development, region-specific cultural and institutional factors persist to have some effect on the kinds of jobs in the weather service which are available to women.
- While in some countries women and men enjoy equal educational opportunities, there are still a significant number of countries where women still need access to formal education and training in the fields of meteorology and hydrology if they are to play a greater role in the future.
- In some cases, employment opportunities for women have not kept pace with the rise in women's educational levels and aspirations.
- Social barriers to female participation in the work force are sometimes being eroded by social and economic development.

CHALLENGES:

To make progress, the NMHSs, the WMO and meteorologists and hydrologists are challenged to:

- Promote development policies emphasizing universal education.
- Improve female education to reduce the gender gap in earnings.
- Change social attitudes about women within the family, society and, in particular, within the work environment.
- Create an empowering environment for women in the workplace/NMHSs.
- Work to change national policies where applicable to improve the status of women.
- Serve the unique needs of women as end-users of our products.
- Provide incentives to keep young women in the NMHSs.

- Encourage young girls to take up science subjects (e.g. math, physics) so they are qualified to pursue a career in meteorology or hydrology.
- Change the traditional concept of power/management which has been developed by men for men.

OPPORTUNITIES:

Opportunities to move ahead include:

- Scope for regional cooperation and assistance in specific areas of female education, skills training and employment creation.
- Foreign investment and foreign aid to contribute to the improvement of women's status especially in low-income countries.
- Training programs to be directed specifically for women especially those in countries where women have less access to employment in the NMHSs.

SECOND WMO CONFERENCE ON WOMEN IN METEOROLOGY AND HYDROLOGY

Geneva, Switzerland, 24 to 27 March 2003

LIST OF PARTICIPANTS

Afghanistan

Arifa Hoshmand
Member of Department of General Meteorology
Afghan Meteorological Authority
Khwaga Rawash, P.O. Box 425
Kabul

Algeria

Zineb Chemlal
Sous Directrice des Affaires Pédagogiques
Institut Hydrométéorologique de Formation et
de Recherches
B.P. 7019 Seddikia
31025 Oran
Tel: (213-41) 423 550
Fax: (213-41)
E-mail: z.chemlal@yahoo.fr

Argentina

Miriam Andrioli
Chief, Public Relations Department
Servicio Meteorológico Nacional
25 de Mayo 658
1002 Buenos Aires
Tel: (54-11) 5167 6713
Fax: (54-11) 5167 6713
E-mail: msandrioli@ciudad.com.ar
andrioli@meteofa.mil.ar

Armenia

Valentina Grigoryan
Deputy Head
Hydrometeorology and Environment Monitoring
Agency
54 Leo Street
Yerevan 375002
Tel: (374-1) 533 575
Fax: (374-1) 533 575
E-mail: meteo@stalker-tc.am
valent_g2000@yahoo.com

Albania

Eglantina Bruci
Head, Climatological Division
Hydrometeorological Institute
Durrresi Street, 219
Tirana
Tel: (355-4) 259 359 - 45
Fax: (355-4) 223 518
E-mail: eglantinab@yahoo.com

Algeria

Naïma Tirouche
Chef de Section "Application aux Secteurs
Publics"
Office National de la Météorologie
Tamaris
Mohammadia
Tel: (213-21) 219 618
Fax: (213-21) 507 979
E-mail: tirouchenaima@yahoo.fr

Argentina

Marcelo Valle Fonrouge
Conseiller
Permanent Mission of the Republic of Argentina
in Geneva
Tel: (41-22) 929 8600
Fax: (41-22)
E-mail:

Australia

Janita Pahalad
Professional Officer II
Australian Commonwealth Bureau of
Meteorology
Melbourne
Tel: (613) 9669 4859
Fax: (613) 9669 4678
E-mail: j.pahalad@bom.gov.au

Bahamas

Kaylinda Ward
Meteorological Officer Grade II
Department of Meteorology
P.O. Box N-8330
Nassau
Tel: (1-242) 356 3734
Fax: (1-242) 356 3739
E-mail: kaylindaward@yahoo.com

Barbados

Kathy-Ann Caesar
Meteorologist/lecturer
Caribbean Institute for Meteorology and
Hydrology (CIMH)
St James
Tel: (1-246) 425 1362
Fax: (1-246)
E-mail: kacaesar@cimh.edu.bb

Belarus

Tamara Tereschenko
Head, Hydrometeorological Forecasting Service
Department of Hydrometeorology
16 Komsomolskaya Street
220050 Minsk
Tel: (37-517) 264 0260
Fax: (37-517) 264 0335
E-mail: skrt@by.mecom.ru

Bolivia

Patricia Cabero Uriona
Meteorologa; abogada
Servicio Nacional de Meteorología e Hidrología
(SENAMHI)
Calle Reyes Ortiz No.41
Casilla No. 10993
La Paz
Tel: (591-2) 236 1329
Fax: (591-2) 239 2413
E-mail: pattycabero@yahoo.com

Canada

Nancy Cutler
Director General
Policy and Corporate Affairs
Meteorological Service of Canada
4905 Dufferin Street
Downsview, Ontario M3T 2K5
Tel: (1-416) 739 4938
Fax: (1-416) 739 4380
E-mail: nancy.cutler@ec.gc.ca

Bangladesh

Taslima Imam
Meteorologist, Meteorological Department
Meteorological Complex, Agargaon
Dhaka 1207
Tel: (880-2) 811 3071
Fax: (880-2) 911 8283
E-mail: bmd dhaka@bttb.net.bd
bmdswc@bdonline.com
kamili@dhaka.net

Barbados

Sonia A.S. Nurse
Meteorologist
Department of Meteorology
Seawell
Tel: (1-246) 428 9834
Fax: (1-246) 428 1676
E-mail: sas_nurse@hotmail.com

Benin

Nadège Ahohuendo
Technicien supérieur en hydrologie
Direction de l'Hydraulique
Service de Hydrologie
B.P. 385
Cotonou
Tel: (229) 335 201
Fax: (229) 310 890
E-mail: aonf@uva.org

Brunei Darussalam

Rokiah Haji Angas
Meteorological Officer
Brunei Meteorological Service
Department of Civil Aviation
Bandar Seri Begawan BB2513
Tel: (673-2) 330 142
Fax: (673-2) 332 735
E-mail: meteobru@brunet.bn
rokiah_1@yahoo.com

Canada

Martha McCulloch
Director, National Prediction Programmes
Meteorological Service of Canada
Montreal, Quebec
Tel: (1-514) 421 4603
Fax: (1-514)
E-mail: martha.mcculloch@ec.gc.ca

Canada

Joanne St. Coeur
Planning Officer
Meteorological Service of Canada
Hull, Quebec
Tel: (1-819) 997 4027
Fax: (1-819) 994 8854
E-mail: joanne.st-coeur@ec.gc.ca

China

Dong Chaohua
Engineer General
National Satellite Meteorological Centre
China Meteorological Administration
46 Zhongguancun Nandajie
Haidian District
Beijing 100081
Tel: (86-10) 6840 6237
Fax: (86-10) 6217 2724
E-mail: dchua@nsmc.cma.gov.cn

China

Yaxi Guo
Vice Director
Chinese Academy of Meteorological Sciences
(CAMS)
100081 Beijing
Tel: (86-10) 6840 9148
Fax: (86-10) 6217 5931
E-mail: yxguo@cams.cma.gov.cn

Costa Rica

Irina Katchan
Meteorologist/Forecaster
Instituto Meteorológico Nacional (IMN)
Apartado Postal 5583
1000 San José
Tel: (506) 222 5616
Fax: (506) 223 1837
E-mail: ikatchan@imn.ac.cr

Dominican Republic

Mercedes Mejia
Director, Department of General Meteorology
Oficina Nacional de Meteorología
Av. Juan Moliné, No.1, Los Mameyes
Villa Duarte, Apartado de Correos No. 1153
Santo Domingo, D. R.
Tel: (1-809) 788 1122
Fax: (1-809) 594 8844
E-mail: mechy.mejia@codetel.net.do

Chad

Lucie Namodji
Agrometeorologiste
Direction des Ressources en eau et de la
Météorologie
Service Hydrologique, B.P. 429
N'Djamena
Tel: (235) 523 081
Fax: (235) 523 900
E-mail: sacdrem@intnet.td
lucie.namodji@caramail.com

China

Yanxiang Li
Chief Forecaster
National Meteorological Centre
China Meteorological Administration
46 Zhongguancun Nandajie
Haidian District
100081 Beijing
Tel: (86-10) 6840 6344
Fax: (86-10) 6217 2909
E-mail: lyx8997@163.com

Congo

Bernadette Fouani
Meteorologist
Service météorologique national
B.P. 208
CG Brazzaville
Tel: (242) 683 777
Fax: (242)
E-mail: fouani_bernadette@yahoo.fr

Dominica

Mathilda Bruney
Meteorological Assistant
Canefield Met Services
Canefield Airport
Tel: (1-767) 448 2014
Fax: (1-767) 449 2020
E-mail: metoffcan@cwdom.dm

Ecuador

Gilma Carvajal
Chief, Department of Agrometeorology
Instituto Nacional de Meteorología e Hidrología
Iñaquito 700 y Corea
Quito
Tel: (593-2) 596 934
Fax: (593-2) 433 934
E-mail: gilbecar@inamhi.gov.ec
gilmacarvajalm@hotmail.com

El Salvador

Lorena Soriano
Coordinadora, Centro de Pronosticos
Meteorologico
Servicio Meteorológico Nacional, Servicio
Nacional de Estudios Territoriales (SNET)
San Salvador
Tel: (503) 283 2271
Fax: (503) 223 7798
E-mail: Isoriano@snet.gob.sv

Ethiopia

Almaz Tadesse
Meteorological Officer I
National Meteorological Services Agency
P.O. Box 1090
Addis Ababa
Tel: (251-1) 615 779
Fax: (251-1) 517 066
E-mail: almaz_ay@yahoo.com

Finland

Liisa Fredrikson
Head, Regional Services
Finnish Meteorological Institute
P.O. Box 8178
FIN-96101 ROVANIEMI
Tel: (358-16) 363 6720
Fax: (358-16) 363 6730
E-mail: liisa.fredrikson@fmi.fi

France

Magali Stoll
Synergie Program Manager
Météo-France
Toulouse
Tel: (33-5) 6107 8274
Fax: (33-5) 6107 8079
E-mail: magali.stoll@meteo.fr

Gambia

Adama Njie
Chief Forecaster
Department of Water Resources
7, Muamar Ghadaffi Avenue
Banjul
Tel: (220) 472 720
Fax: (220) 225 009
E-mail: dwr@gamtel.gm

Estonia

Merike Merilain
Head, Forecasting Department
Estonian Meteorological and Hydrological
Institute
Rävala 8
10143 Tallinn
Tel: (372) 646 1628
Fax: (372) 646 1577
E-mail: merike@emhi.ee

Fiji

Vive Adilakicagi Biukoto
Lead, Severe Weather Forecaster
Fiji Meteorological Service
Private Mail Bag (NAP 0351)
Nadi Airport
Tel: (679) 672 4888
Fax: (679) 672 0430
E-mail: vive@met.gov.fj

France

Geneviève Delsol
Chef de Cabinet, Directrice Editoriale
Atmosphérique
Météo-France
1, quai Branly
F-75340 Paris Cédex 07
Tel: (33-1) 4556 7010
Fax: (33-1) 4556 7005
E-mail: genevieve.delsol@meteo.fr

Gabon

Arlette Kelly Mackosso
Directeur
Direction de la météorologie nationale
B. P. 377
Libreville
Tel: (241) 761 551 / 313 389
Fax: (241) 761 551
E-mail: mackossoarlette@yahoo.com

Georgia

Marine Arabidze
Head, Main Department for Personnel
Department of Hydrometeorology
150 ave.Davida Agmashenebeli
Tbilisi 380012
Tel: (995-32) 960 650
Fax: (995-32) 955 006
E-mail: geomet@wet-sat.com

Germany

Gudrun Rosenhagen
Meteorologist
German Meteorological Service
Marine Meteorological Division
Hamburg
Tel: (49-40) 6690 1844
Fax: (49-40) 6690 1941
E-mail: gudrun.rosenhagen@dwd.de

Guinea

Mariama Dalanda Diallo
Ing hydrotechnique chargée d'études
Direction nationale de la météorologie
Ministère des Travaux Publics et des Transports
B. P. 566
Conakry
Tel: (224) 290 823 / 227 527
Fax: (224) 452 559
E-mail: dalandiallo2002@yahoo.fr

Honduras

Vilma Gladis Guzman Guzman
Sub-Jefe, Departamento de Agroclimatologia
(Meteorologo)
Servicio Meteorológico Nacional
Dirección General de Aeronáutica Civil
Apartado Postal 30145
Aeropuerto Toncontin
Tegucigalpa
Tel: (504) 233 1114
Fax: (504) 233 8075
E-mail:

India

Balasubramanian Shyamala
Deputy Director General of Meteorology
Meteorological Office (Simla Office)
Shivaji Nagar
Pune-411 005
Tel: (91-20) 553 5797
Fax: (91-20) 553 5877
E-mail: iyershynamala@rediffmail.com

Islamic Republic of Iran

Shahindokht Taghikhan
Senior Forecaster
Islamic Republic of Iran Meteorological
Organization
P.O. Box 13185-461, Tehran
Tel: (98-21) 600 4043
Fax: (98-21) 600 4041
E-mail: taghikhan@irimet.net

Ghana

Elikem Setsoafia
Meteorologist
Ghana Meteorological Department
P.O. Box 9471
Accra
Tel: (233-21) 776 171 ext 1267
Fax: (233-21) 701 2519
E-mail: elikem_s@yahoo.com

Guinea Bissau

Maria de Fatima Nosoliny Vieira
Meteorologist
Direcção-General do Serviço Meteorológico
Nacional
MRNA/DGRH
B.P. 398
1001 Bissau
Tel: (245) 212 332
Fax: (245)
E-mail: fnovgi@yahoo.com.br

Hong Kong, China

Sharon Lau Sum Yee
Senior Scientific Officer
Hong Kong Observatory
134A Nathan Road
Kowloon
Tel: (852) 2926 8431
Fax: (852) 2375 2645
E-mail: sylau@hko.gov.hk

Indonesia

Rosliany
Head, Legal Matters and Organization
Bureau of Meteorology and Geophysics (BMG)
Jl. Angkasa 1 No. 2 Kemayoran
P.O. Box 3540 JKT
Jakarta 0720
Tel: (62-21) 654 6339
Fax: (62-21) 424 6703
E-mail: any@bmg.go.id

Italy

Franca Mangianti de Angelis
Meteorological Technical Manager
Ufficio Centrale di Ecologia Agrario (UCEA)
Via del Caravita 7a
00186 Rome
Tel: (39-06) 6953 1207
Fax: (39-06) 6953 1215
E-mail: fmangianti@ucea.it

Italy

Anna Maria Siani
Researcher, Physics Department
University of Roma "La Sapienza"
p. le A. Moro 2
00165 Rome
Tel: (39-06) 4991 3479
Fax: (39-06) 4463 158
E-mail: annamaria.siani@uniroma1.it

Japan

Tomoko Koyama
Senior Scientific Officer
Meteorological Satellite Centre
Japan Meteorological Agency
1-3-4 Otemachi, Chiyoda-ku
Tokyo 100-8122
Tel: (81-4) 2493 1118
Fax: (81-4) 2493 7800
E-mail: t_koyama@met.kishou.go.jp

Kenya

Stella Aura
Assistant Director, International Relations and
Training Department
Meteorological Department
P.O. Box 30259
Nairobi
Tel: (254-2) 567 880
Fax: (254-2) 576 955
E-mail: stella.aura@lion.meteo.go.ke
stellaaura@yahoo.com

Latvia

Inita Stikute
Deputy Director
Latvian Hydrometeorological Agency
165, Maskavas Str.,
Riga LV - 1019
Tel: (371) 703 2603
Fax: (371) 714 5154
E-mail: inita.stikute@meteo.lv

Libyan Arab Jamahiriya

Intsar A. Biri
Forecaster at Main Analysis Centre
Libyan Meteorological Department
P.O. Box 5069
Tripoli
Tel: (218-21) 462 0391 / (218-204) 620 391
Fax: (218-21) 444 0106
E-mail: intbiri@hotmail.com

Jamaica

Yvette Hope McGann Beckford
Operational Meteorologist
National Meteorological Service
Palisadoes
Tel: (1-876) 924 8055
Fax: (1-876) 960 8989
E-mail: hopemcgann@hotmail.com

Kazakhstan

Lyudmila Chuntanova
Director
Regional Hydrometeorological Centre in Astana
ul. Druzhby 29 "6"
473000 Astana
Tel: (7-3172) 396 569
Fax: (7-3172) 396 929
E-mail: kazmet_akm@nursat.kz

Kyrgyz Republic

Inna Mayatskaya
Head, Department for Hydrometeorological
Observations, Forecasts and Information
State Agency for Hydrometeorology
1, Karasuiskaya Street
Bishkek 720017
Tel: (996-312) 213 826
Fax: (996-312) 214 422
E-mail: inna@kyrgyzmeteo.elcat.kg

Lesotho

Joalane Rethabile Mphethi
Meteorologist, Climate Change Section
Lesotho Meteorological Services
P.O. Box 14515
Maseru-100
Tel: (266-22) 322 075
Fax: (266-22) 325 057
E-mail: joalane@lesmet.org.ls
Rethabile55@hotmail.com

Macao, China

Mei Meng Lou
Meteorologist
Meteorological and Geophysical Bureau
Rampa do Observatório Taipa Grande
Caixa Postal No. 93
Macao
Tel: (853) 898 6258
Fax: (853) 850 557
E-mail: meteo@smg.gov.mo

Malawi

Lucy Ng'ombe
Meteorologist
Meteorological Services
P.O. Box 2
Chileka
Tel: (265-1) 692 333
Fax: (265-1) 692 329
E-mail: metdept@metmalawi.com
lucyngombe@yahoo.com

Mali

Gueye Sissoko
Chef, Section Statistique Climatologique
Direction nationale de la météorologie
Boîte postale 237
Bamako
Tel: (223) 229 6203
Fax: (223) 229 2101
E-mail: dnm@malinet.ml

Mongolia

V. Enkhbold
Third Secretary
Permanent Mission of Mongolia in Geneva
Tel: (41-22) 774 1974
Fax: (41-22) 774 3201
E-mail: venkhbold@yahoo.com

Morocco

Ouafa Ouzzine
Chargée de la Coopération Internationale
Direction de la météorologie nationale
B.P. 8106, Casa-Oasis
20103 Casablanca
Tel: (212-22) 913 533
Fax: (212-22) 913 687
E-mail: ouzzine@mtpnet.gov.ma

Namibia

Olga Mathilde Karunga
Meteorological Technician
Meteorological Services
Private Bag 13224
Windhoek 9000
Tel: (264-61) 287 7000
Fax: (264-61) 287 7009
E-mail: om_karunga@yahoo.com

Malaysia

Zawiah Mohd. Taib
Meteorological Officer in Training Unit
Malaysian Meteorological Service
Jalan Sultan
46667 Petaling Jaya, Selangor, Darul Ehsan
Tel: (603) 7967 8067
Fax: (603) 7955 0964
E-mail: zawiah@kjc.gov.my

Mauritius

Suzanne Boodhoo
Senior Hydrological Officer
Ministry of Public Utilities
Water Resources Unit
Royal Commercial Centre, III Floor
St. Ignace Street, Rose Hill
Tel: (230) 465 9540
Fax: (230) 465 7177
E-mail: wru@intnet.mu

Mongolia

Bat-ochir Nyam-Od
Chief, Aviation Meteorological Centre
National Agency for Meteorology, Hydrology
and Environmental Monitoring
Khudaldaany Gudamj-5
Ulaanbaatar 46
Tel: (976-11) 379 869
Fax: (976-11) 325 622
E-mail: nyam.od2002@yahoo.com

Myanmar

Daw Ye Ye Nyein
Assistant Director
Department of Meteorology and Hydrology
No. 50 Kaba-aye Pagoda Road
Mayangon P.O. Box 11061
Yangon
Tel: (95-1) 665 669
Fax: (95-1) 665 944
E-mail: dg.dmh@mptmail.net.mm

Nepal

Keshari Bajracharya
Senior Divisional Chemist
Hydrological Section
Department of Hydrology and Meteorology
P.O. Box 406, Babar Mahal
Kathmandu
Tel: (977-1) 553 8890
Fax: (977-1) 425 4890
E-mail: keshari538@yahoo.com

New Zealand

Ashmita Gosai
Climate Applications Scientist
National Institute of Water & Atmospheric
Research (NIWA)
269 Kyber Pass Road, New Market
Auckland
Tel: (64-9) 375 4506
Fax: (64-9) 375 2051
E-mail: a.gosai@niwa.co.nz

Nigeria

Lihwu Eugene Akeh
Director General
Nigerian Meteorological Agency
Federal Ministry of Aviation
Strachan Street
P.M.B. 12542
Abuja
Tel: (234-9) 523 8357
Fax: (234-9) 523 8357
E-mail:

Nigeria

Ayuba Kadafa
Minister
Permanent Mission of Nigeria in Geneva
Tel: (41-22) 730 1414
Fax: (41-22)
E-mail:

Nigeria

Ngozi N. Omeruah
Minister's Entourage
Lagos
Tel: (234-1) 269 4812
Fax: (234-1) 269 4813
E-mail: ngoziomeruah@yahoo.com

Nigeria

Juliana Enyinnaya Ukeje
Assistant Director, Climate Services
Nigerian Meteorological Agency
Abuja
Tel: (234-9) 523 8357
Fax: (234-9) 523 8357
E-mail: julie_ukeje@yahoo.co.uk

Niger

Sitta Aissatou
Agent d'encadrement au Service
Agrométéorologie
Direction de la Météorologie Nationale
B.P. 218
Niamey
Tel: (227) 732 160
Fax: (227) 733 837
E-mail: aissasita_s@yahoo.fr

Nigeria

Anthony Anuforum
Special Assistant to the Minister
Federal Ministry of Aviation
Strachan Street
P.M.B. 12542
Abuja
Tel: (234-9) 523 2112
Fax: (234-9) 523 1603
E-mail: tonyanuforum@yahoo.com

Nigeria

Modupe Aduke Ogunwale
Deputy Director, Applied Sciences
Nigerian Meteorological Agency
P.M.B. 12542
Lagos
Tel: (234-1) 452 2836
Fax: (234-1) 263 6097
E-mail: maogunwale@netscape.net

Nigeria

Obiageli A.C. Orji
Chief Hydrologist
Nigeria Federal Ministry of Water Resources
Abuja
Tel: (234-9) 234 2520
Fax: (234-9) 234 3714
E-mail: oacorji@yahoo.com

Pakistan

Asma Younas
Meteorologist
Pakistan Meteorological Department
Sector 11 8/2
P.O. Box 1214
Islamabad
Tel: (92-51) 925 7314
Fax: (92-51) 443 2588
E-mail: asma_aiya@hotmail.com

Paraguay

Lourdes Elizabeth Rodriguez Rolandi
 Tec. Meteorologo - Pronosticador
 Dirección de Meteorología e Hidrología
 Aeropuerto Silvio Pettirossi
 Asunción
 Tel: (595-21) 646 095
 Fax: (595-21) 646 095
 E-mail: ler_rolandi@yahoo.com

Philippines

Flaviana Hilario
 Supervising Weather Specialist
 Climatology and Agrometeorology Branch
 (CAB)
 PAGASA
 Quezon City
 Tel: (63-2) 434 0955
 Fax: (63-2)
 E-mail: fhilarioph@yahoo.com

Republic of Korea

Seung-hee Sohn
 Senior Research Scientist
 Korea Meteorological Administration
 460-18, Shindaebang-dong
 Dongjak-gu
 Seoul 156-720
 Tel: (82-2) 842 2161
 Fax: (82-2) 842 2162
 E-mail: bighand@kma.go.kr

Romania

Elena Cordoneanu
 Head, National Centre of Weather Forecast
 National Institute of Meteorology and Hydrology
 Sos. Bucuresti-Ploiesti 97
 71552 Bucharest
 Tel: (40-21) 230 3116
 Fax: (40-21) 230 3143
 E-mail: cordnoneanu@meteo.inmh.ro

Russian Federation

Marina Petrova
 Director General of Meteo Agency
 ROSHYDROMET
 Novovagan'kovsky Street 12
 123995 Moscow
 Tel: (7-095) 205 4800
 Fax: (7-095) 255 5075
 E-mail: agency@mcc.mecom.ru

Peru

Ena Jaimes Espinoza
 Directora de Climatología
 Servicio Nacional de Meteorología e Hidrología
 (SENAMHI)
 Jr. Cahuide 805, 4to. Piso
 Casilla Postal 1308
 Lima 11
 Tel: (51-1) 470 4863
 Fax: (51-1) 472 4180
 E-mail: ejaimes@senamhi.gob.pe

Poland

Malgorzata Mierkiewicz
 Head, Hydrological Models Division
 Institute of Meteorology and Water
 Management
 ul. Podlesna 61
 01-673 Warsaw
 Tel: (48-22) 569 4141
 Fax: (48-22) 569 4143
 E-mail: malgorzata_mierkiewicz@imgw.pl

Republic of Moldova

Lyudmila Fisher
 Senior Engineer
 Hydrometeorological Service
 193 Grenoble Str.,
 2043 Chisinau
 Tel: (373-2) 773 536
 Fax: (373-2) 773 636
 E-mail: clicom@hidromet.meteo.md

Russian Federation

Tatiana Burtseva
 Chief, Russia SRC Planeta
 ROSHYDROMET
 Novovagan'kovsky Street 12
 123995 Moscow
 Tel: (7-095) 255 2421
 Fax: (7-095) 200 4210
 E-mail: burc@planet.iitp.ru

Russian Federation

Nataliya Shestakova
 Scientific Secretary, WMC
 Hydrometeorological Scientific Research
 Centre RF
 B. Predtechenskii per., 11-13
 Moscow 123234
 Tel: (7-095) 225 1268
 Fax: (7-095) 255 1582
 E-mail: nshest@rhmc.mecom.ru

Rwanda

Pascalie Mukaremera
Meteorologist Class III
Direction générale de l'aéronautique,
Division météorologique du Rwanda
Ministère des Transports et des
Communications
B.P. 898, Kigali
Tel: (250) 758 13
Fax: (250) 729 71
E-mail: mukapassy@yahoo.fr

Sao Tome and Principe

Bernardina Viana F.Vaz
Meteorologist Class I (WMO)
Institut national de météorologie
B.P. 30, Sao Tomé
Tel: (239) 221 975
Fax: (239) 221 975
E-mail: bernardinavaz@yahoo.com

Seychelles

Chantale Ruth Bijoux
Meteorological Officer, Aviation Forecasting
National Meteorological Services
P.O. Box 1145
Botanical Gardens
Mahé
Tel: (248) 384 066
Fax: (248) 384 078
E-mail: c.bijoux@pps.gov.sc

Slovakia

Gabriela Babiaková
Hydrologist-Researcher
Slovak Hydrometeorological Institute
Jeséniova 17
P.O. Box 15
83315 Bratislava
Tel: (421-2) 5477 1192 / 5541 5403
Fax: (421-2) 5477 6562
E-mail: gabriela.babiakova@shmu.sk

Sri Lanka

Anusha Rashanthie Warnasooriya
Meteorologist
Department of Meteorology
Buddhaloka Mawatha
Colombo 07
Tel: (94-1) 684 746
Fax: (94-1) 698 311
E-mail: rashanthie@yahoo.com

Saint Lucia

Dawn Daniel
Met Officer III
Hewanorra Meteorological Service
Vieux-Fort
Tel: (1-758) 454 6550
Fax: (1-758) 454 9705
E-mail: dawndaniel@hotmail.com

Senegal

Anta Seck
Director, Water Resources Planning and
Management
Ex Camp Lat Dior, B.P. 4021
Dakar
Tel: (221) 822 2154 / 823 1817
Fax: (221) 822 9581
E-mail: seckanta@sentro.sn

Singapore

Lay Eng Lim
Head, Tengah Met Office
Meteorological Services Division
National Environment Agency
P.O. Box 8
Singapore Changi Airport
Tel: (65) 6761 2596
Fax: (65) 6761 2599
E-mail: lim_lay_eng@nea.gov.sg

Slovenia

Tanja Cegnar
President, Slovenian Meteorological Society
and Head, Climatological Department
Environmental Agency of the Republic of
Slovenia
Vojkova 1b,
1001 Ljubljana
Tel: (386-1) 478 4079
Fax: (386-1) 478 4054
E-mail: tanja.cegnar@gov.si

Sudan

Bashir Hanan Awad Mohamed
Senior Meteorologist
Meteorological Authority
P.O. Box 574
Khartoum
Tel: (249-11) 778 836
Fax: (249-11) 771 693
E-mail: ersad@sudanmail.net

Suriname

Truusje Soetinie Warsodikromo
Operational Meteorologist
Meteorological Service Suriname
Duisburg, P.O. Box 2273
Paramaribo
Tel: (597) 325 173 / 325 206
Fax: (597) 325 206
E-mail: wtruus@yahoo.com
meteozean.sr.net

Syrian Arab Republic

Orouba Marwa
Engineer
Meteorological Department
P.O. Box 4211
Damascus
Tel: (963) 9433 4536
Fax: (963) 11 662 5737
E-mail: uroobah@scs-net.org

Thailand

Somsri Huntrakul
Director, Bureau of Meteorological Affairs
Thai Meteorological Department
4353 Sukhumvit Road, Bang-Na
Bangkok 10260
Tel: (662) 399 4004
Fax: (662) 399 2354
E-mail: tmd_inter@tmdnet.motc.go.th

Togo

Essohana Djatoubai
Technicienne supérieure en agrométéorologie
Direction de la météorologie nationale
Boîte postale 1505
Lomé
Tel: (228) 221 4806
Fax: (228) 222 4838
E-mail: esso90@yahoo.fr

Trinidad & Tobago

Joanna Sooknanan
Meteorologist Class II
Meteorological Services Division
P.O. Box 2141 National Mail Centre
Piarco Trinidad
Tel: (1-868) 669 5465
Fax: (1-868) 669 4727
E-mail: synop@tstt.net.tt

Swaziland

Duduzile Nhlengethwa
Meteorologist
Department of Meteorology
Ministry of Public Works and Transport
P.O. Box 58
Mbabane
Tel: (268) 404 9468
Fax: (268) 404 1530
E-mail: dudu@swazimet.gov.sz

Tajikistan

Jamila Baidulloeva
Head, Weather Forecasting Division
Main Administration of Hydrometeorology and
Monitoring of the Environment
Ministry of Environment
47 Shevchenko Str., Dushanbe 734025
Tel: (992-372) 231 717
Fax: (992-372) 215 522
E-mail: jamiley@mail.ru
baidulloeva_jamila@yahoo.co.uk

Thailand

Wassana Wongrat
Meteorologist
Thai Meteorological Department
4353 Sukhumvit Road, Bang-Na
Bangkok 10260
Tel: (662) 398 9929
Fax: (662) 399 2354
E-mail: w_wongrat@hotmail.com

Tonga

Seluvai Finaulahi
Climatologist
Tonga Meteorological Services
Ministry of Civil Aviation and Meteorological
Services
Nuku' alofa
Tel: (676) 23 401
Fax: (676) 24 145
E-mail: sfinaulahi@mca.gov.to

Tunisia

Ben Amor Asma Khanfir
Ingénieur
Institut national de la météorologie
Ministère du Transport, B.P. 156
2035 Tunis-Carthage
Tel: (216-71) 773 400
Fax: (216-71) 772 609
E-mail: a_khanfir@yahoo.fr

Turkey

Aynur Bozoglu
Physicist, Remote Sensing Division
Turkish State Meteorological Service (SMS)
Ankara
Tel: (90-312) 302 2620
Fax: (90-312) 359 3430
E-mail: abozoglu@meteor.gov.tr

Ukraine

Vazira Martazinova
Head, Climate and Long-range Weather
Forecast Division
Hydrometeorology Institute (UHMI)
6, Zolotovorotskaya Street
252601 MSP Kiev 34
Tel: (380-44) 227 4054
Fax: (380-44) 265 5363
E-mail: nigmi2@mail.kar.net

United Republic of Tanzania

Tabu Elihazina Mrutu
Manager in training
Tanzania Meteorological Agency
P.O. Box 3056
Dar es Salaam
Tel: (255-22) 110 231
Fax: (255-22) 112 471
E-mail: met@meteo-tz.org
temrutu@yahoo.co.uk

United States of America

Christina del Castillo
Programme Analyst, International Activities
Office
National Weather Service, NOAA
1325 East West Highway #11125
Silver Spring, MD 20910
Tel: (1-301) 713 0645 ext 114
Fax: (1-301) 587 4524
E-mail: christina.delcastillo@noaa.gov

United States of America

Fiona Horsfall
Meteorologist, Climate Services Division
National Weather Service
W/OS4, Room 13344
1325 East West Highway
Silver Spring, MD 20910
Tel: (1-301) 713 1970 ext 137
Fax: (1-301) 713 1520
E-mail: fiona.horsfall@noaa.gov

Uganda

Margaret Serwanja
Meteorologist, Publicity & International
Relations, Department of Meteorology
P.O. Box 7025, Kampala
Tel: (256-41) 251 798
Fax: (256-41) 251 797
E-mail: margotnankya@mail.com

United Kingdom

Maureen Frances Mylne
Project Specialist, Human Resources Branch
The Met Office
London Road
Bracknell, Berkshire, RG12 2SZ
Tel: (44-1344) 856 911
Fax: (44-1344) 854 543
E-mail: mo.mylne@metoffice.com

United States of America

Chantale Damas
AAAS/NSF Science and Technology Policy
Fellow
National Science Foundation
Directorate for Geosciences
4201 Wilson Blvd, Suite 1070
Arlington, VA 22230
Tel: (1-703) 292 7857
Fax: (1-703) 292 9152
E-mail: mdamas@nsf.gov
mdamas305@aol.com

United States of America

Mary Glackin
Assistant Administrator, Programme Planning
and Integration
NOAA
SSMC1, Room 8310
1335 East West Highway
Silver Spring, MD 20910
Tel: (1-301) 713 2010
Fax: (1-301) 713 1249
E-mail: mary.glackin@noaa.gov

United States of America

John J. Kelly, Jr.
Director
National Weather Service, NOAA
1325 East West Highway
Silver Spring, MD 20910-3283
Tel: (1-301) 713 9095
Fax: (1-301) 713 0610
E-mail: jack.kelly@noaa.gov

United States of America

Vickie Nadolski
Western Region Director
Western Region Headquarters
National Weather Service
125 South State Street, Room 1311
Salt Lake City, Utah 84102
Tel: (1-801) 524 5122
Fax: (1-801) 524 5270
E-mail: vickie.nadolski@noaa.gov

United States of America

Dian J. Seidel
Research Meteorologist
NOAA Air Resources Laboratory
1315 East West Highway
Silver Spring, MD 20910
Tel: (1-301) 713 0295 ext 126
Fax: (1-301) 713 0119
E-mail: dian.seidel@noaa.gov

Uzbekistan

Fatima Kasimova
Chief, Hydromet Centre
Glavgidromet
72, K. Makhsumov Street
Tashkent 700052
Tel: (998-71) 133 7821
Fax: (998-71) 133 7821
E-mail: synoptic@meteo.uz

Venezuela

Adriana Cortez
Investigador I, Departamento de
Agrometeorología CENIAP
Instituto Nacional de Investigaciones Agrícolas
(INIA)
Postal 4846
Maracay 2101 Edo
Tel: (58-243) 247 1874
Fax: (58-243) 247 1874
E-mail: acortez@inia.gov.ve

Zimbabwe

Tsitsi Bandason
Climate Database Administrator
Department of Meteorological Services
P.O. Box BE 150 Belvedere
Harare
Tel: (263-4) 778 173
Fax: (263-4) 778 172
E-mail: tsitsi@weather.utande.co.zw

United States of America

Maria Pirone
Vice President, Product and Marketing
Development
Atmospheric and Environmental Research, Inc.
131 Hartwell Avenue
Lexington, MA 02421-3136
Tel: (1-781) 761 2205
Fax: (1-781) 761 2299
E-mail: mpirone@aer.com

United States of America

Sepideh Yalda
Associate Professor of Meteorology
Millersville University of Pennsylvania
P.O. Box 1022
Lancaster, PA
Tel: (1-717) 872 3293
Fax: (1-717)
E-mail: sepi.yalda@millersville.edu

Vanuatu

Mercy Nalawas
Climate Officer
Vanuatu Meteorological Service
Private Mail Bag 54
Port Vila
Tel: (678) 23 866
Fax: (678) 23 310
E-mail: climate@meteo.vu

Zambia

Florence Chanda Chongo
Senior Communication Officer
Zambia Meteorological Department
P.O. Box 30200
Lusaka
Tel: (260-1) 251 889
Fax: (260-1) 251 469
E-mail: zmd@zmd.com

Participants from WMO Non-members

Grenada

Cécil Mitchell
Meteorological Officer Class IV
Meteorological Office
Point Salines International Airport
St George's
Tel: (473) 440 5806 (H) / 444 4142 (W)
Fax: (473) 444 1574
E-mail: firstsweetce@hotmail.com

Saint Vincent & the Grenadines

Joan Williams
Meteorological Assistant Class IV
E.T. Joshua Airport
Kingstown
Tel: (1-784) 458 4011 (W) / 458 4477
451 3346 (H)
Fax: (1-784) 458 4786
E-mail: etjoshua@caribsurf.com
jayj_1@lycos.com

Keynote Speakers

Nigeria

Dr Kema Chikwe (Mrs)
Honourable Minister of Aviation
Federal Ministry of Aviation
Strachan Street
P.M.B. 12542
Abuja
Tel: (234-9) 523 2240
Fax: (234-9) 523 8357

Swaziland

Lydia P. Makhubu
President, Third World Organization of Women
in Science
Vice Chancellor, University of Swaziland
Kwaluseni Campus
P/Bag
Kwaluseni
Tel: (268) 518 5655
Fax: (268) 518 5605
E-mail: sharon@uniswacc.uniswa.sz

Presenters

Bolivia

Betty Soto Terrazas
Medica Salubrista
Servicio Nacional de Meteorología e Hidrología
(SENAMHI)
Calle Reyes Ortiz No.41
Casilla No. 10993
La Paz
Tel: (591-2) 243 2792
Fax: (591-2)
E-mail: nito1@ceibo.entelnet.bo

Kenya

Maria Onyango
Educationist
Maseno University
P.O. Box 1446
Kisumu
Tel: (254-35)
Fax: (254-35) 51 221
E-mail: clajos2000@yahoo.com

South Africa

Emma Archer
Climate System Analysis Group
Department of Environmental & Geographical
Science
University of Cape Town
Private Bag 7701
Rondebosch
Tel: (27-21) 650 2999
Fax: (27-21) 650 5773
E-mail: archer@egs.uct.ac.za

ILO

Linda Wirth
International Labour Organization
Geneva, Switzerland
Tel: (41-22) 799 7879
Fax: (41-22)
E-mail:

ITU

Patricia Faccin
International Telecommunication Union
Geneva, Switzerland
Tel:
Fax:
E-mail: patricia.faccin@itu.int

UNFCC

Joke Waller-Hunter
United Nations Framework Convention on
Climate Change
Bonn, Germany
Tel: (49-228) 815 1102
Fax: (49-228) 815 1999
E-mail: secretariat@unfccc.int

Observers

Japan

Masako Imai
Air Photographer
Cloud Castle / Photo Sky Japan
21-8, Seijo 5, chome
Setagaya-ku 157-0066
Tel: (81-3) 3484 6256
Fax: (81-3) 3484 6208
E-mail: cod-imai@ma.kcom.ne.jp

WMO Secretariat

7 bis Avenue de la Paix
Case Postale No 2300
CH-1211 Genève 2
Switzerland

UNECE

Patrice Robineau
United Nations Economic Commission for
Europe
Tel:
Fax:
E-mail: patrice.robineau@unece.org

Switzerland

Joanna Koch
Associated Country Women of the World
Alte Landstrasse 89
8802 Kilchberg
Tel: (41-1) 715 1946
Fax: (41-1) 715 4137
E-mail: joannakoch@gmx.net

Professor G.O.P. Obasi
Secretary-General

Mr M. Jarraud
Deputy Secretary General

Mr Hong Yan
Assistant Secretary-General

Mr Kaliba Konare
Director
Education and Training Department
Tel: (41-22) 730 8180
Fax: (41-22) 730 8041
E-mail: konare_l@gateway.wmo.ch

Ms Haleh Kootval
Chief, Public Weather Services (PWS) Division
World Weather Watch, Applications Department
Tel: (41-22) 730 8333
Fax: (41-22) 730 8021
E-mail: hkootval@wmo.ch
Kootval_h@gateway.wmo.ch

Mrs Valery Detemmerman
Senior Scientific Officer
World Climate Research Programme
Tel: (41-22) 730 8242
Fax: (41-22) 730 8036
E-mail: detemmerman_v@gateway.wmo.ch

Ms Liisa Jalkanen
Senior Scientific Officer
Atmospheric Research & Environment Programme
Tel: (41-22) 730 8587
Fax: (41-22) 730 8049
E-mail: jalkanen_l@gateway.wmo.ch

Mrs Nanette Lomarda
Senior Scientific Officer
Tropical Cyclone Programme Division
World Weather Watch, Applications Department
Tel: (41-22) 730 8384
Fax: (41-22) 730 8021
E-mail: lomarda_n@gateway.wmo.ch

Ms Teruko Manabe
Senior Scientific Officer
Ocean Affairs Division
World Weather Watch, Applications Department
Tel: (41-22) 730 8449
Fax: (41-22) 730 8021
E-mail: manabe_t@gateway.wmo.ch

Ms Carine Richard-Van Maele
Chief, Information and Public Affairs
Tel: (41-22) 730 8314 / 15
Fax: (41- 22) 730 8027
E-mail: vanmaele@gateway.wmo.ch

Ms Erna Dar-Ziv
Chief, Conferences Unit
Tel: (41-22) 730 8343
Fax: (41-22) 730 8927
E-mail: darziv_e@gateway.wmo.ch

Ms Teresa Alcober
Secretary of the PWS Division
World Weather Watch, Applications Department
Tel: (41-22) 730 8476
Fax: (41-22) 730 8021
E-mail: alcober_t@gateway.wmo.ch

Dorothea F. Banse
Intern, World Climate Applications and CLIPS
Division
World Climate Programme
Tel: (41-22) 730 8278
Fax: (41-22) 730 8042
E-mail: Banse_D@gateway.wmo.ch

**SECOND WMO CONFERENCE ON
WOMEN IN METEOROLOGY AND HYDROLOGY**

Geneva, 24-27 March 2003

AGENDA

- I. OPENING OF THE CONFERENCE
- II. KEYNOTE SPEECHES: "The Contribution of Women to Science and Technology"
- III. ORGANIZATIONAL ARRANGEMENTS
- IV. EXPERIENCE IN OTHER INTERNATIONAL ORGANIZATIONS
- V. GENDER MAINSTREAMING IN METEOROLOGY AND HYDROLOGY
- VI. BREAKING THROUGH THE GLASS CEILING
- VII. TAKING STOCK: REPORT ON WMO SURVEY RESULTS
- VIII. TAKING STOCK: NMHSs EXPERIENCES
Opportunities and challenges, national policies and experiences
- IX. REVIEWING AND BUILDING ON BANGKOK RECOMMENDATIONS
- X. MEETING CHALLENGES
 - a) Introduction
 - b) Training through WMO programmes
 - c) Career development
 - d) Networking and Mentoring
 - e) Using new technologies including telecommuting
- XI. THE WAY FORWARD
 - a) Increasing participation of women in WMO activities
 - b) Maintaining momentum
 - c) Methods to report/monitor progress
 - d) Role of focal points/rapporteurs
- XII. NEXT STEPS - REPORT TO CONGRESS
- XIII. ADOPTION OF THE CONFERENCE REPORT
- XIV. CLOSURE